USING MULTIPLE DETECTION ALGORITHMS IN POSITIONING SIGNAL PROCESSING

JULIEN BASCH
ANDREW CHOU
ROBERT LORENZ
JESSE STONE

ABSTRACT OF THE DISCLOSURE

A systematic method for acquiring positioning signals, such as global positioning system (GPS) signals, uses different signal detection algorithms at different stages of signal detection. For example, a method for detecting multiple positioning signals may include first detecting a first positioning signal using a robust but less sensitive signal detection method, such as non-coherent integration. Based on the signal parameter values that allow detection of the first positional signal, detecting a second positioning signal using a more sensitive method, such as coherent integration. In this manner, by capturing the strongest signal first using a robust method, signal detection parameter values common to positioning signals can be narrowed to allow subsequent signal acquisitions using a more sensitive -- but computationally more intensive -- method.